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ABSTRACT

The testimony presented in this report addresses the effects of recent reforms on the achievement of disadvantaged students, their dropout rates, and their enrollments in vocational education. An evaluation of programs in four large-city school districts revealed that educational reform has been neither a disaster nor a boon for the performance of low-achieving students: the reforms have not improved educational outcomes to any great extent. All students demonstrated a very similar achievement pattern to that of at-risk students. The educational reform may have done less to aid Hispanic students than Blacks. The reforms did not improve the performance of students no at risk; nor did they have any effect on dropout rates, though they may have contributed to a small decline in vocational enrollments. Prior progress was not maintained for some disadvantaged groups, at least over the short-term. The long-term effects of the reforms have yet to be seen. If the educational reforms did not have the damaging effects on low-achievers that some feared they would, neither did they produce the general advances that advocates of reform have hoped for. Data are presented on five tables and figures. (BJV)

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Impacts of Education Reform

Statement of
Eleanor Chelimsky
Assistant Comptroller General for
Program Evaluation and Methodology

Before the
Subcommittee on Elementary, Secondary
and Vocational Education
Committee on Education and Labor
United States House of Representatives

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Mr. Chairman and Members of the Subcommittee:

I am very pleased to be here today to discuss GAO's work on education reforms and their impacts. Specifically, Mr. Chairman, you asked us for an evaluation of the effects of recent reforms on the achievement of disadvantaged students, on their dropout rates and on their enrollments in vocational education. My testimony today thus addresses a general concern about how the specific reforms that have imposed stricter new requirements in high schools might have affected the nation's most disadvantaged, at-risk students.

On balance, our study shows that in the four large-city school districts we evaluated, education reform has been neither a disaster nor a boon for the performance of low-achieving students. Looking at the performance of all students in these districts, we did not find that the reforms we examined improved education outcomes a great deal. Finally, prior progress was not maintained for some disadvantaged groups, at least over the short term. The big question, then, is the longer term: whether performance will improve over time. It is important to note that the students we studied were the first to experience the reforms' effects.

We are completing our analyses this month and the full findings will be included in a written report later this year. Our study offers quasi-experimental evidence on the local effects of state reforms in four major city school districts located in four geographically dispersed states. Its results cannot be generalized beyond these sites.

THE SCHOOL DISTRICTS WE STUDIED AND OUR APPROACH

The four school districts in our study vary in enrollment from 40,000 to 230,000. All are in urban areas. One is located in the northeast, two are in the southeast, and the fourth is in the southwest. Black and Hispanic students are in the majority in each district. The legislative mandates these districts implemented included varying combinations of

- -- requiring specific tests for graduation,
- -- increasing academic course requirements,
- -- tightening attendance rules,
- -- setting "no pass/no play" rules governing participation in sports or other activities, and
- -- requiring or making available varying degrees of remedial classes for those in difficulty.

Other details about the four school districts we studied can be found in table 1.

The basic data for answering the questions came from school districts' computerized student records. Our design called for achievement tests and other data on students as far back as 1982, so that we could analyze students' high school careers before and after reform. Altogether, we traced the progress of 61,500 students as they moved through secondary schools. I would like to express my appreciation here to the four districts for their cooperation in assembling the large data files we asked for. We also visited each district and interviewed central office officials

Table 1: Characteristics of Selected School Districts

District	Region	Major reforms affecting students	City population	School district enrollment	Number of students studied	Year post-reform cohort entered grade 9	Race/ethnic enrollment White	Black	Hispanic
A	SW	Proficiency test More academic courses Stricter attendance rules "D" no longer passing Remediation for low test-scores "No pass/no play" rule	900,000	130,000	17,700	1984-85	19%	50%	28%
B	NE	Proficiency test Remedial help required	380,000	50,000	2,600	1985-86	10	64	26
C	SE	More credit in math & science Remedial help required for low test-scores "No pass/no play" rule Fewer vocational education requirements	70,000	40,000	5,200	1983-84	44	55	--
D	SE	Must pass proficiency test Additional science credit required Some specific academic course requirements added Extra period added in 3rd year Remedial help authorized but not funded	350,000	230,000	36,000	1983-84	23	33	43

as well as principals and teachers in high schools. Before presenting our findings, let me first address the question of whether and how educators in our four school districts attended to the needs of disadvantaged students during the period in which the reforms were initiated.

HOW SCHOOLS TRIED TO HELP LOW-ACHIEVING STUDENTS

One hypothesis about current education reforms is that, although clearly intended to raise educational achievement for all students, they could actually be harmful for disadvantaged, low-achieving or at-risk students by creating additional barriers to school completion without providing resources and assistance for them to meet the new standards. Did we see evidence that this was happening in our four school districts? We did not. In describing their implementation of their states' new requirements, educators in these cities told us of a wide variety of initiatives to help students meet the higher standards. These included, for example:

-- offering an optional additional period in the day even when the state did not fund it, to help students take all the required courses;

-- altering teaching methods, class sizes, and the content covered, to help students learn enough to pass required tests;

-- increasing individual attention by counselors to students who may not meet increased requirements;

-- offering special remedial classes during the regular year, or in special periods before and after school or on weekends for students who fail the required high school exit examination;

-- offering summer work-study for students who failed the exit exam during the year, providing remedial classes in the morning and a job in the afternoons;

-- requiring teachers to develop special individual improvement plans for low-achieving students to target instruction on specific skills needed;

-- reorganizing school to provide special self-contained programs and extra attention for students needing extensive help in all basic skills.

We did not evaluate the adequacy, in terms of quantity or quality, of each district's specific education programs in relation to students' needs. However, it appeared to us that the districts were in general making serious efforts to be fair in helping all students meet the new requirements.

The effect of these efforts is the question I turn to next.

IMPACTS OF EDUCATION REFORMS ON STUDENT ACHIEVEMENT

As I have already noted, some people argue that disadvantaged students--those who reach high school already achieving poorly or having been held back, who are limited in their English ability, or who are members of minority racial or ethnic groups--may find the

increased requirements of education refo orm an insuperable barrier to graduation. Thus, one guess about th he likely effects of the higher hurdles set by reform would invol lve student failure and exit. Achievement, while perhaps increa asing for some students, might not rise among those who are at-ri isk. For these students, more vivid failure in classes and on req quired tests may be accompanied by restricted opportunities t to participate in the athletic and extracurricular life of the s school, which together with other frustrations, could lead to i increased drop-out rates.

On the other hand, many legislators s and school officials believe that the reforms could have thei ir intended effect. According to this hypothesis, the changed ed legal framework of increased requirements would be translate ted by teachers into higher expectations for all students, better ide dentification of learning gaps, and increased provision of extra he help, such as the initiatives taken in our four school dist stricts, to help low-achieving students bridge those gaps. In In this view, at-risk students would be even more likely to ben nefit from reform than more academically advantaged students.

The key question we asked in compari ring student achievement before and after the introduction of the reforms is whether there are benefits for low-achieving and minori rity students as well as for higher achievers and white students. Dat ata from our four districts showed that, in general, low-achievers di did not universally fall behind after the reforms, as had been fea ared. Indeed, we found some test score trends showing students g gaining more from school

after reform than before, and this was true for both low-achieving and for higher-achieving students. However, these gains, overall, were very modest. As for instances of markedly worse drops in achievements through high school after reform, these most negative results actually happened more often for the higher-achieving group.

Let me now turn to a more detailed analysis of these findings.

Impacts on At-Risk or Low-Achieving Students

We defined at-risk students in all four districts as those at the 34th percentile or lower on grade 8 reading achievement tests. We tracked the progress of these eighth graders through high school in terms of their performance on reading and mathematics tests. We also tracked similar results for higher-achieving--that is, not at-risk--students. We examined the performances of two groups of at-risk students: a group that completed high school before the reforms were in effect (the pre-reform group) and the first group to pass through school under the full reform requirements (the post-reform group). Thus, the principal reforms (such as increased course requirements and graduation exams) were in effect throughout the high school years for the post-reform groups, but did not affect the pre-reform groups at all.

We have results, then, across their high school careers to compare two cohorts of at-risk students (pre-reform and post-

reform) in four cities on two achievement measures each--reading and mathematics--or a total of eight achievement comparisons.

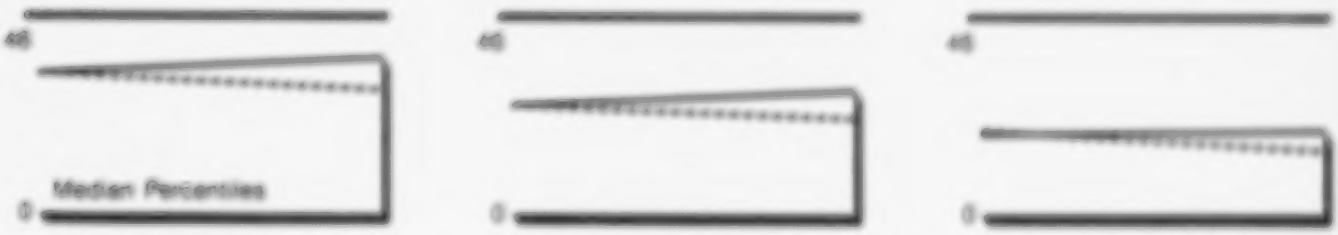
Our findings are negative on five of these eight outcomes, as shown at the bottom of figure 1. The most negative of these is in District B, where we see a decline throughout high school by both the pre-reform and post-reform groups in reading achievement. Further, the decline is slightly sharper for the post-reform group. The group starts grade 8 slightly worse off than the pre-reform group (at the 22nd percentile versus the 23rd) and drops to the 15th percentile, thus declining 7 percentile points or one more than their predecessors.

How do we assess the other four cases of no net gain? In District A, it is true that the post-reform group improved its percentile standing in both reading and mathematics relative to the norms. In addition, the post-reform group has higher test scores by grade 11 than the pre-reform group. But the growth rate of the post-reform group throughout high school was lower than that of the pre-reform group. (This finding is reflected by the somewhat steeper lines shown in the graph for the pre-reform group in District A.) Moreover, the post-reform group had a higher <u>initial</u> grade 8 performance than the pre-reform group. These initial differences may result from changes in the community or in testing practices, or could represent stronger performance at the elementary grades. In any case, the post-reform group's initial advantage fades in high school, despite reform efforts.

Figure 1:
Achievement of At-Risk Students: Comparisons of Pre-reform and Post-reform Groups from Grade 8 Through High School Testing

Pattern of Net Gain for Post-Reform Students Relative to Pre-Reform Students

a. Reversal from negative to positive trend

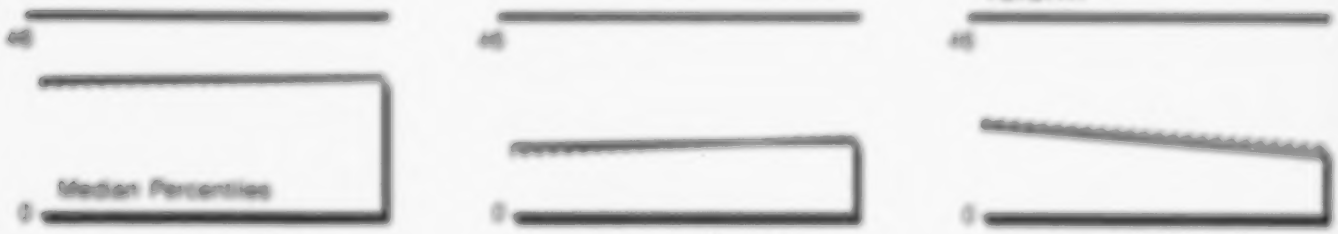


District B — Math | District C — Math | District C — Reading

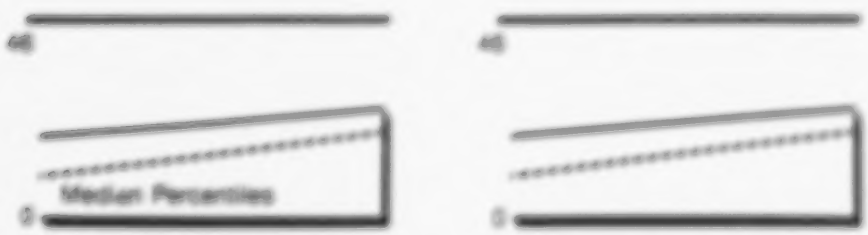
Patterns of No Net Gain for Post-Reform Students Relative to Pre-Reform Students

a. Positive trends for both cohorts; less gain after reform

b. Negative trends for both cohorts; slightly greater decline after reform



District D — Math | District D — Reading | District B — Reading



District A — Math | District A — Reading

Post-reform cohort

Pre-reform cohort

In addition to the District A results, we found two more examples of positive trends for both the pre- and post-reform groups but lower rates of gain after reform. In District D, the post-reform group started slightly ahead of the pre-reform group in both mathematics and reading, but lost those advantages and ended up only equal to, or slightly lower than, its predecessor by the final testing year.

On the other hand, we do have findings of net gain on some of the eight outcomes. The upper part of figure 1 shows three clear examples of positive impacts of education reform for at-risk students. Note that in all three cases, the post-reform group median percentile scores increased throughout high school, while the pre-reform group had had declines. In short, in these three cases, the post-reform group of at-risk students both improved their performance relative to the national norms and improved more than the pre-reform group (which, in fact, had declined rather than improved). These three positive impacts were found in District C in both reading and mathematics and in District B in mathematics.

These achievement results do suggest that at-risk students have not suffered "disasters" as a result of education reform in these four cities. But our findings on the eight outcomes are both mixed and modest.

Impacts on Black and Hispanic Students

We paid special attention in our study to the impacts of education reforms on minority students. I move now to the results for all black and Hispanic students, not just those with lower test scores.

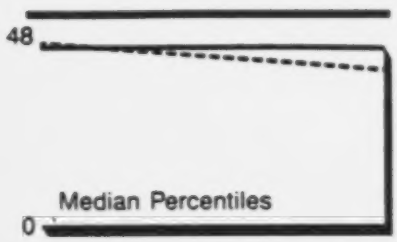
For blacks, the results are about the same as I have reported for students at-risk due to low reading achievement: 3 cases of overall net gain (see figure 2). The only difference is for reading in District D. Those results showed a slight positive trend (though no net gain) for at-risk students (see figure 1) but are increasingly negative for blacks after reform. Figure 2 thus shows two such cases of increasingly negative trends for black students, compared to only one for low-achieving students (in figure 1).

For Hispanics, the results were different. We had data for only six comparisons instead of eight due to the very small Hispanic student population in District C. The results showed no instances of net gains for the post-reform group and two cases of increasing negative trends. Figure 3 shows the reading decline for Hispanics in Districts B and D, which worsened after reform. Two other results--mathematics in Districts B and D--show the Hispanic students' performance relative to national norms declined somewhat during high school for both the pre-reform and post-reform groups. The results for reading and mathematics in District A

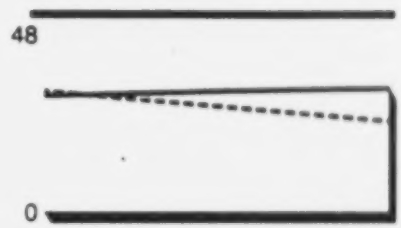
Figure 2:
Black Student Achievement: Comparisons of Pre-reform and Post-reform Groups from Grade 8 Through High School Testing

Pattern of Net Gain for Post-Reform Students Relative to Pre-Reform Students

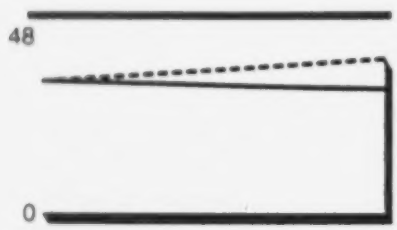
a. Reversal from negative to positive or flat trend



District B — Math



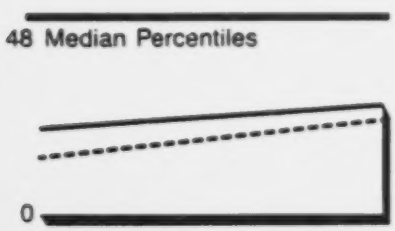
District C — Reading



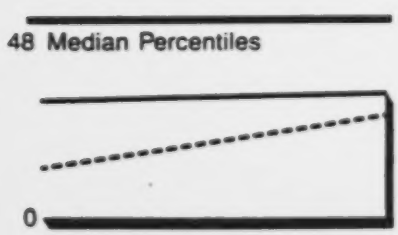
District C — Math

Patterns of No Net Gain for Post-Reform Students Relative to Pre-Reform Students

a. Positive trends for both cohorts; less gain after reform cohorts

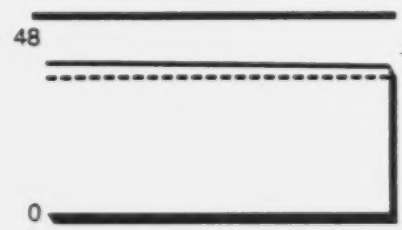


District A — Reading



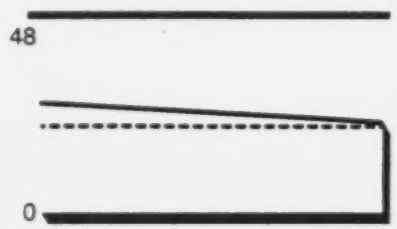
District A — Math

b. Almost flat trend before and after reform



District D — Math

c. Negative trends for both cohorts; slightly greater decline after reform



District D — Reading

District B — Reading

——— Post-reform cohort
------- Pre-reform cohort

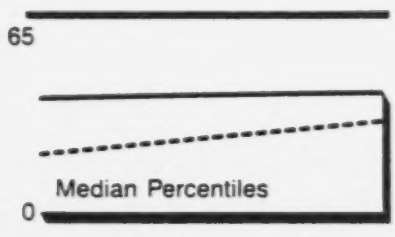
Figure 3:
Hispanic Student Achieveme nt: Comparisons of Pre-reform and Post-reform Group s from Grade 8 Through High School T esting

Patterns of Net Gain for Post-Ref orm Students Relative to Pre-Reform C ohort

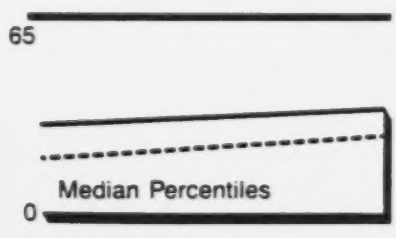
— No instances

Patterns of No Net Gain for Post-R eform Students Relative to Pre-Reform St dents

a. Positive trends for both cohorts; less gain after reform

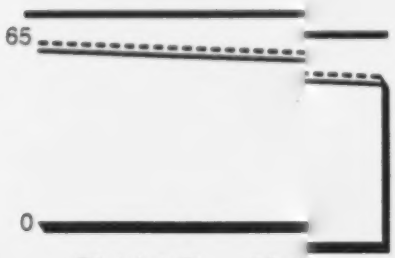


District A — Math

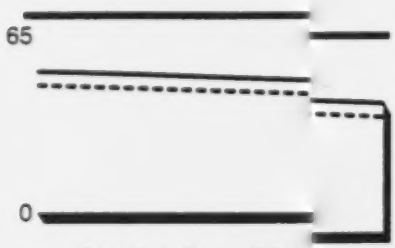


District A — Reading

b. Equally negative trends

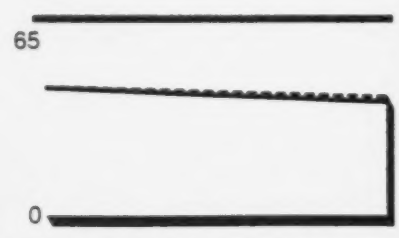


District D — Math

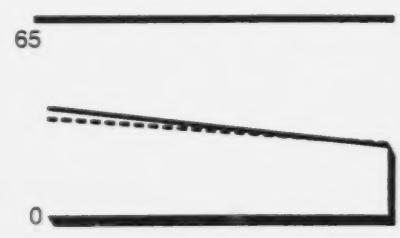


District B — Math

c. Negative trends for both cohorts; slightly greater decline after reform



District D — Reading



District B — Reading

Post-reform cohort

Pre-reform cohort

were mixed, but essentially the same as the pattern of no net gains we saw for blacks and for at-risk students in District A.

In short, our results suggest that the education reform experience may have done less to aid Hispanic students. (Since there are few Hispanic students in the successful District C, we cannot tell how their comparative performance would have been there.)

Impacts on Higher-Achieving Students

We also traced the experience of higher-achieving, not at-risk students: that is, those scoring at and above the 35th percentile in grade 8 reading. These results served as another yardstick against which to measure the results for low-achieving students and for minorities, but they are, of course, interesting in and of themselves.

We found somewhat weaker performance by the better students than by at-risk students (see figure 4). District C again showed net gains in both reading and mathematics. The District A mathematics results were somewhat positive in that the downward trend for the pre-reform group improved slightly. However, there were three instances of increasingly negative results--reading and mathematics in District B, and reading in District D--compared with only one in figure 1.

In summary, we did not find, in these four school districts, that education reform has produced more favorable results for

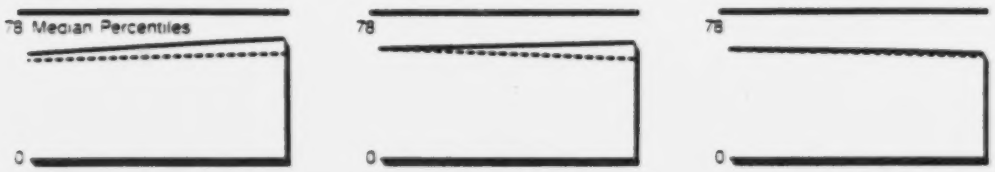
Figure 4:
Achievement of Not-at-Risk Students: Comparisons of Pre-reform and Post-reform Groups from Grade 8 Through High School Testing

Pattern of Net Gain for Post-Reform Students Relative to Pre-Reform Students

a. Positive trends for both cohorts; more gain after reform

b. Reversal from negative trend to positive trend

c. Negative trends for both cohorts; slightly less negative after reform

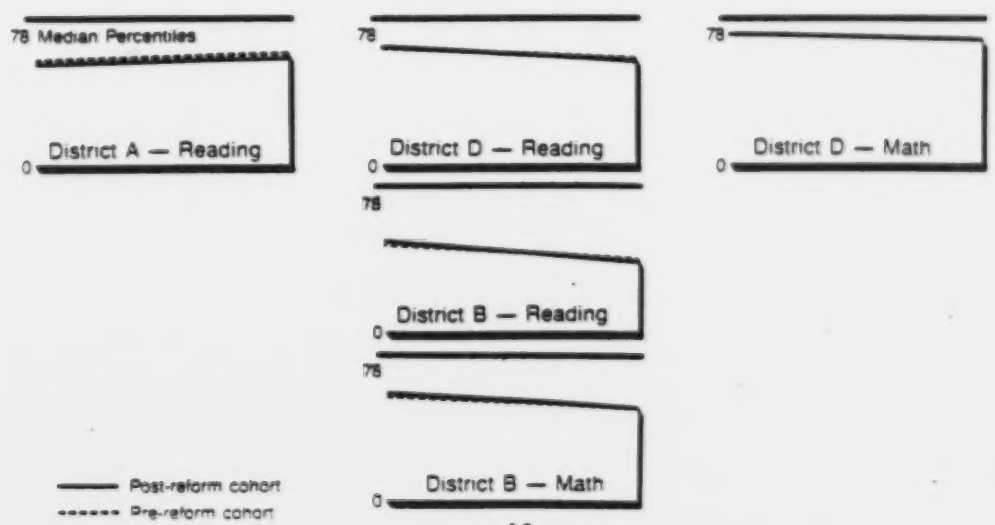


Pattern of No Net Gain for Post-Reform Students Relative to Pre-Reform Students

a. Positive trends for both cohorts; less gain after reform

b. Negative trends for both cohorts; slightly greater decline after reform

c. No change in negative trend



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higher-achieving students than for at-risk students. However, two caveats are in order here. First, we included students at and above the 35th percentile in our category of not at-risk students, so the group incorporates students presenting a fairly wide range of performance. It is possible that favorable results could be found within smaller subsets of this not at-risk group. Second, this sample of four school districts contains large numbers of at-risk students and high percentages of non-white students. The results for the not-at-risk group may therefore have been atypical of the same group in a differently proportioned sample.

The impacts of education reforms on at-risk students, however modest the net gains, appear somewhat more positive in the light of this comparison, since the performance trends of higher-achieving students may be, if anything, somewhat worse than that of the lower achievers. I refer here only to the patterns of changes for the two groups; the not-at-risk group obviously continues to have higher median achievement scores than does the at-risk group.

Conclusions From the Data on the Impacts of the Reforms on Achievement

Our analysis of these data lead me to four findings and two observations. First, school districts have made efforts to be fair in their programs, by intervening in favor of those most at risk of failure under the tougher requirements. Second, in our four sites, education reform did not result in either marked losses or

substantial gains in academic achievement for at-risk students. Improvements were small. While we found more cases of net gains than worsened negative trends, it is also true that most of our comparisons found no net gains. Third, black students showed a very similar pattern to that of at-risk students. Fourth, Hispanic students showed the least favorable trends in reading and mathematics scores. Not only did we fail to uncover any net gains for them from reforms in the three school districts that had Hispanic students, but the trend of their scores across high school was down in most cases. This was the only group we studied which did not share at all in the modest gains associated with reform in some places.

A first observation based on these findings is that, for most groups of students--including higher-achieving students--on most tests in these four districts, the plain fact is that net gains did not predominate. In many cases, students after reform showed smaller achievement gains in high school than did students before (though at least they gained a little). Still, as I noted earlier, our study was conducted at an early stage in the development of these reforms, and it may be that after a few years of experience with them we could see some greatly enhanced student achievements. Or else subsequent changes in districts' programs could lead to different and better outcomes.

The second observation is that the small degree of improvement we are reporting may be a reason for another kind of concern, and that is that even these modest results may not be educationally

significant. During our site visits to the districts, we were told that--in the face of new reforms requiring students to pass high school exit exams--concerned teachers sometimes "taught to the test." This is not necessarily a negative finding if it stems from more intense, effective teaching of general skills, because higher scores could be interpreted as reflecting better-prepared graduates. However, students (and society) are less well served if teachers "teach to the test" in the narrow sense of using materials like the test and teaching students how to deal with particular kinds of items. That approach might lead to more proficient test-takers but only an illusory benefit from reform.

In summary, then, impacts on at-risk students' achievement from education reforms were not strong one way or the other. There were some small gains, but these were matched by more negative trends especially for higher-achieving students and Hispanics.

IMPACT OF THE REFORMS ON DROP-OUT RATES FOR AT-RISK STUDENTS

The next question we asked was whether at-risk students quit school more in the post-reform period under the pressure of more rigorous academic requirements and whether they quit school more than other students. Two of the four districts provided data that allowed us to calculate drop-out rates in the pre- and post-reform cohorts.

We did not find a consistent pattern of results for at-risk students in the drop-out data: the trends were not the same in the two districts which had usable data. The drop-out rate for low-achieving students across the high school years worsened by three percent for the post-reform group in District A. It improved by one percent in District D. These trends were the same for all students, no matter what their achievement level. Educators we spoke with in the two districts had many views about the drop-out problem but we found no consensus that could explain the small fluctuations we found in the data. It seems reasonable to believe that education reforms did not have a particular effect on drop-out rates in these two school districts.

IMPACTS OF THE REFORMS ON ENROLLMENT IN VOCATIONAL EDUCATION

The last question we examined, after looking at the achievement and drop-out effects of education reforms on students, was whether those reforms affected students' enrollment in vocational education courses. Recall that the reforms we studied included tougher graduation requirements (such as more academic courses and proficiency exams), as well as stricter requirements making activity and athletic participation contingent on attendance and grades. The effect on students here could be expected to come through their schedules: more time spent on academics, either in new courses or in remedial work for the exams, reduces

opportunities to enroll in vocational edu ucation courses that are usually elective, not required. Low-achi ieving students in general would have more trouble meeting increased d academic requirements and would be more likely to have to participa ate in required remedial instruction. These would pose obvious ba arriers for those who wanted to take vocational courses.

Thus the questions we needed to answ wer were first, what has been the effect of reforms in four school l districts on all students' vocational education enrollment t? And second, have there been disparate impacts on low-achievers?

We are particularly pleased to be ab ble to present at least part of our analysis on the topic today, since we believe it is a start towards significant improvement of the data available on the subject. For example, we found data from m state education agencies in two of the states where our study dist tricts are located which indicates that statewide vocational educat ation enrollment has declined over the years that education re eforms were implemented.[1]

We believe observers should not draw w the obvious conclusions,

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[1]In one state that increased academic grad eduation requirements and mandated remedial instruction without fund nding a longer school day, vocational education enrollment decreased d by 7,335 or 6 percent from 1984-85 to 1985-86, the time period c coinciding with the first and second years of educational reforms. During this same time period, enrollment in state mandated remed dial math, English, and reading instruction increased by approxim mately 6,000. Data from another state demonstrate a steep decline in vocational education enrollment after educational reforms were implemented and a strong up-swing in vocational education enrollmen nts several years later (from 760,000 in 1981-82 to 433,000 in 198 983-84 and back up to 734,000 in 1986-87). In this state, requir rements were toughened two years before the state funded an additiona al period of instruction per school day.

however. Such aggregate figures can present at least two sorts of problems:

-- they include all school districts, thus mingling a wide range of variation in schedule and vigor of reform; and

-- they can be affected by overall declines in student enrollment, which would affect enrollments in all course areas, not only vocational education.

A better test of the effects of reform will come from studies of actual course-taking in specific districts over time, in relation to specific histories of reform activity. To show the potential of such analysis, we can report today on our work analyzing one district's records on different groups of students' course enrollments before and after new requirements went into effect.

We found that the average student in the post-reform group took more academic courses and fewer vocational courses than his or her predecessor--about two more academic courses and one-half a course fewer in vocational education. Academics could increase without a corresponding vocational course decrease because this district expanded the day, adding one period of classes per day after reforms were implemented.

Did the at-risk group experience special pressures, owing to remedial classes perhaps, that may have caused a steeper drop in vocational enrollments? Our data, from this one district, say no. We found precisely the same pattern for the at-risk group after reform as for all students: more academics (about two courses) and

a smaller decrease in vocational enrollments (about one-half a course across the three years of high school).

SUMMARY AND CONCLUSION

We have reported here that education reforms in four school districts, located in four different states, have included significant efforts to help all students succeed, but have attained thus far only modest success in changing the trends of achievement seen before. We were impressed in our site visits by the school district staffs' general concern about low achievement, by the remediation requirements for those who have not succeeded, and by the dedication of teachers as shown by volunteer efforts before and after school and in summer to give extra help to at-risk students even when districts could not afford to expand the formal program. In that sense, the reforms have engendered not only more academics and higher standards, but an effort to encourage and support those who have not been successful.

However, the results are mixed. We saw some net gains, but not as many as there perhaps should have been, given the extensiveness of the reforms and the hopes of their advocates. The impacts of reforms specifically on at-risk students were modest in terms of net gains, although they appear somewhat more positive when compared to impacts on higher achievers whose results were somewhat worse.

The results for Hispanic students showed once again that educators still have a long way to go in designing effective education for them. We saw no net gains in the Hispanic data. The trend of their achievement across high school, in two of three school districts we studied was downward even after reform: students performed worse relative to national norms at the end of high school than at the start.

Did reform accelerate dropping-out, or lower vocational education course-taking, especially for low-achieving groups? Our data disclose no dramatic or consistent effect in either case. Considering two districts, dropping out went up slightly in one and down slightly in the other, and for everybody. With respect to course enrollments, we saw a small decline in vocational course-taking, but no one-for-one swap in which added academic classes replaced previous vocational courses in the one district we have looked at so far, and the pattern is again the same for all students. The key here is apparently adequate resources: when the school day can be enlarged, then vocational electives can coexist with additional requirements from reform.

All things considered, if the education reforms we examined in four city school districts did not have the damaging effects on low achievers that some feared they would, it is also true that they did not produce the general advances their advocates have hoped for.

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This concludes my prepared statement. I will be happy to answer any questions you may have.